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Introduction

SPIE student chapter of Beijing University of Posts and Telecommunications (BUPT) is an academic association for senior undergraduates, postgraduates and PhD students, supervised by the academic committee of Beijing University of Posts and Telecommunications. By carrying out a variety of academic activities, paying close attention to the development of science and industry, the club aims to foster an interest in optoelectronics profession, enhance the communication among students, universities and companies. The club will make all the members more competitive in the academic research area, job career, and international committees.

The last academic year is the tenth year since we established SPIE Student Chapter of BUPT. During the last academic year, which was the eighth year of this newly established students club, we have organized several activities to fulfill the main objectives of the Club. Concerning the Club’s academic objective, we invited Prof. Richard Penty to deliver a lecture with the topic “Polymer Waveguides for Very High-Speed Board-level Optical Interconnects” to the Club members. Moreover, our BUPT SPIE Student Chapter representatives attended the Student Leader Workshop of Beijing, in Capital University. We also encourage members to participate in international conferences and forums, such as the Student Leader Workshop on Optics and Photonics 2016 held in San Diego, which provides opportunities to be closer to the optical industry. In addition, outgoing activities fulfill members with a much more colorful academic life.

For the upcoming year, 2017, we have recruited new student members, and new officers have been elected. Some activities have already been planned. In addition, we will keep on working together with OSA BUPT Student Chapter and make great efforts to bring more benefits to our members. We are looking forward to the more bright future of this SPIE student chapter.
Club Members for the Year of 2016

There are 60 members in our club for the year of 2016:

Officers:

President: Yi Lei  leiyi@bupt.edu.cn
Vice President: Chunjing Yin  yincji@bupt.edu.cn
Secretary: Ziyi Meng  mengziyi@bupt.edu.cn
Treasurer: Jilong Li  jilongli@bupt.edu.cn

Advisors

Chief Advisor

Prof. Chongxiu Yu

SPIE member; Academic director of Optics and Optical Engineering, the Inspection Security Technology Expert of the National Bureau of Quality Supervision; Vice Chairman of the Chinese Optical Society of Hologram and All Optical Information processing professional Committee; Director of Research Center of Optoelectronics Material and Devices, the State Key Laboratory of Information Photonics and Optical Communications.

Advisors Committee

Prof. Jintong Lin

IET Fellow; CIC Fellow; Hon. Dr. of Sci., Univ. of Southampton; Executive member of the China Institute of Communications; Former President of BUPT.

Prof. Xiaomin Ren

SPIE member; IET Fellow; Senior member of Chinese Optical Society; Vice President of BUPT; Chairman of Academic Committee of BUPT; Director of the State Key Laboratory of Information Photonics and Optical Communications.

Prof. Wanyi Gu

Member of the China Institute of Communications; Vice Chairman of Academic Committee of BUPT; Vice Director of the State Key Laboratory of Information Photonics and Optical Communications.
**Prof. Yuefeng Ji**

CIC Fellow; Member of the China Institute of Communications; Executive Director of Institute of Information Photonics and Optical Communications of BUPT; Deputy Director of the State Key Laboratory of Information Photonics and Optical Communications.

**Prof. Xue Chen**

Member of China Institute of Communications; Vice Chairman of Academic Committee of the State Key Laboratory of Information Photonics and Optical Communications; Director of Research Center of Optical Communication System and Photonic Network, the State Key Laboratory of Information Photonics and Optical Communications.

**Prof. Xiaoguang Zhang**

Director of Research Center of Fundamentals of Information Photonics, the State Key Laboratory of Information Photonics and Optical Communications.

**Prof. Kun Xu**

Obtainer of National Outstanding Young Funds; Vice Director of the State Key Laboratory of Information Photonics and Optical Communications; Director of Space Information Photonics Laboratory.
Chapter Activities

✧ Lecture on “Polymer Waveguides for Very High-Speed Board-level Optical Interconnects”

**Date:** Oct. 24, 2017, Tuesday 2:00 pm – 4:30 pm  
**Place:** Meeting Room 314 of the Research Building

Professor Richard Penty comes from photonics research group of the department of engineering in University of Cambridge. Professor Penty moved to the Cambridge University Engineering Department and was elected to a fellowship of Sidney Sussex College in 2002 and to the Mastership in 2013. He was elected a Fellow of the Royal Academy of Engineering and the IET in 2012. Professor Penty’s main research interests lie in the field of photonics. He has worked for many years on short reach photonic networks for in-building links. This included working on the Ethernet standards and is now concentrating on advanced modulation format approaches to realizing 100Gb/s photonic links using a single optical source. In parallel he has research on polymer waveguide links and sub-systems for on-board and board to board, including backplane, applications. His research on radio over fiber for in-building radio coverage has resulted in the spin out Zinwave. He is involved in research projects studying the energy efficiency of photonic networks and how these can be improved, in co-operation with higher layers in the network stack, to provide better energy efficiency for the internet. Today he was invited to give a lecture on “Polymer Waveguides for Very High-Speed Board-level Optical Interconnects” in Beijing University of Posts and Telecommunications. Members of RF photonics team of the institute of information photonics and optical communications and Professor Jianqiang Li participated in this lecture.

The lecture is about the polymer waveguides used for very high-speed board-level optical interconnects. Firstly, Professor Penty introduced the demand and the developments of high-speed optical interconnects. The explosive data traffic was driving the fast growth of data center interconnects. Higher capacity, higher speed and lower cost were required for today’s optical interconnects, especially for the board-level optical interconnects. Very high-speed board-level optical interconnect technology had the advantage over the conventional board-level electrical interconnects in terms of power efficiency, capacity and speed. Next he explained the structure and the function of the polymer waveguides designed and processed by his team in details. By controlling the coupling length of waveguides, the waveguides can achieve an optical add-drop multiplexing, which was critical for the back plane implements. The experimental results were then depicted with many figures and it was shown that the polymer waveguides had a good performance for very high-speed board-level optical interconnects applications. At last, Professor Penty compared the polymer waveguides with the silicon waveguides. He pointed out that the polymer waveguides were easier to produce when getting a similar performance with the silicon waveguides.

After the lecture, Professor Penty held interactions with other students and teachers in the topic of polymer waveguides and optical interconnects applications. Many students talked about the waveguides developments and innovations with Professor Penty and put forward their own suggestions. In the end, Professor Penty visited the state key laboratory of information photonics
and optical communications of BUPT with the company of many teachers and students. He highly recommended the research environments and enthusiasm in the laboratory.

Prof. Penty is giving the lecture

Teachers and students are listening to the lecture carefully

Prof. Penty is visiting the state key laboratory

The group photo
The Student Leader Workshop of Beijing

Date: November 26, 2016
Place: Capital Normal University, Beijing

Mr. Chunjing Yin and Ms. Yi Lei represented our BUPT SPIE Student Chapter to attend the Student Leader Workshop of Beijing, in Capital University. During this one days’ event, students from 9 SPIE Chapters of Beijing, Tianjin and Ningbo, shared the experience of boosting the development of SPIE student chapter. We want to expand our influence among all the universities of China, through which we can attract more student to devote in optics and photonics field. In the morning, 7 students from different chapters gave us excellent technical lectures about their research area. Through this workshop, we knew more about other chapters, we established very good relationships, making a successful example of interaction among Beijing universities, which benefit both the SPIE chapters and all the universities. We also decided to hold more activities together in the future.

Education Outreach

“Fly with Light” Education Campus Event of Optical knowledge for BUPT Elementary School

Date: October 18, 2016
Place: BUPT Primary School, Beijing

In October 2016, BUPT SPIE student chapter and BUPT OSA student chapter jointly held an education campus event of optical knowledge for affiliated elementary school. The event is named...
as “fly with light”. The vice president of our university and affiliated elementary school have attended the event.

Before the start of the event, the volunteers from the BUPT SPIE student chapter arrived the event site in advance and arranged the venue. The volunteers all wear the red uniform of SPIE, so that we could see the enthusiasm of the volunteers. In order to vividly describe the optical knowledge to the pupils, we design a series of interesting small experiments on optics such as “3D glasses” and “minions disappeared”. These experiments all include rich optical knowledge such as the polarization and refraction of light. By this way, we enhance the fun of the experiments.

The pupils were very fond of this way to learn scientific knowledge. The students all watched the 3D film before the big screen with interest. In addition, volunteers are also specially prepared transparent mirror and red and blue board pen, the purpose is to allow students to make 3D glasses by themselves. By wearing their own glasses, the pupils have brought a different kind of sense of accomplishment. The pupils also join other experiments. They all get fun and optical knowledge.

Before the booth, the students have been an endless stream to visit and practice experiments. The atmosphere is very warm. Through this event, we can see that the Interesting experiment is a popular way to primary school students. Youth education outreach focused event not only enhance the practice ability of students, but also inspire their interest in optical knowledge.
Attended overseas conferences

✧ The Student Leader Workshop on Optics and Photonics 2016

Date: August 5 –10, 2017
Place: San Diego, USA

Mr. Chunjing Yin represented our BUPT SPIE Student Chapter to attend the Student Leader Workshop on Optics and Photonics 2017, in San Diego, CA, USA. During the highly interactive at the first day, Mr. Chunjing Yin has discussed with other student chapter leaders from around the world about how to be a good leader is all about, how to communicate across cultures, and how to go from ideas to achievements for our chapter. Through the sharing of experiences and exchanging of ideas, Mr. Chunjing Yin not only gained new insights in chapter managements, but also established a good networking relationships with other student chapters, and really had a rich and enjoyable days at the conference.

Activity of leader workshop

Mr. Chunjing Yin presenting the poster of BUPT student chapter
Outings and Activities

✧ Team building (Skiing)

Date: January 17th, 2017, Tuesday 9:00 am-15:00 am
Place: Huairou District, Beijing, China

After the new recruit of 2017, Beijing University of Posts and Telecommunications SPIE chapter organized the ski event on January 26, 2016 in Huairou District, Beijing. It is the first time that we hold the orientation through outdoor activity this year. To a great extent, through this special way, the senior members and junior members have made an in-depth communication. At the same time, all the participants have made friends with each other.

This activity organized around forty members, on the same day starting at 9:00 a.m. After the completion of the rental skis and ski suits and some other necessary preparations had been done, everyone went to skiing. Old and new members helped each other and mutual exchanged skiing skills. Even if they fell down time and time again, they still had a great interest in skiing. Because it was really exciting and they experienced a great sense of accomplishment and satisfaction after the gradual success. After a whole day’s trip, everyone was extremely tired but all of us had a blast. From this activity, not only members made friends with each other and mastered a skill, but also, they knew how to overcome our psychological fears and
how to make the first step when they got stuck or learned some new things. Overall, the event was successfully held.

Team building (Badminton Competition)

Date: May 26th - June 22nd, 2016
Place: BUPT Stadium, Haidian District, Beijing, China

Last year, we organized a badminton competition among members. This competition let us harvest very much. Everyone enjoyed the sport and exercised the body setting aside the busy study. Therefore, we held the badminton competition again. Our aim is to help members keep health and relax under the hard study and work.

In the process of planning this activity, the senior members have made a lot of work to guarantee the activity. First of all, we encouraged members to participate in the activity, then we checked time with every member and made a schedule. We booked the badminton court and announced everyone. There are five terms set in the competition including singles, doubles and mixed doubles. Athletes fought hard and audience cheered loudly for their favorite teams, our enthusiasm ran high during the competition. At the end we presented the trophies to the winners and took pictures for memory. We all enjoyed the process and hoped to attend more activities like this.
Through this way, the senior members and junior members have made an in-depth communication, all the participators have made friends with each other. At the same time, members were more interested in playing badminton and organized activities by themselves more often. It's good for our health. From this activity, we also mastered a skill, and learned not to give up easily, but always keep the faith, and trust our teammates.

Student members attended the badminton competition in 2016

Preview of planned activities for 2017

1. Invite experts in optics and photonics to give a lecture at BUPT;
2. Organize regular physical exercise activities, such as badminton or ski;
3. Organize outings and activities for our members;
4. Organize outings and activities to propagate optical knowledge.
# Financial statement

Financial Report for BUPT SPIE Student Chapter

Oct 1st, 2016-Sep 30th, 2017

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<th>Description</th>
<th>Price (CNY)</th>
<th>Total (USD)</th>
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<td>Ending Balance of last year</td>
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<td>Beginning Balance (SPIE supported club activity grant)</td>
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<td>Recruiting fees</td>
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<td>Lecture (Inviting Prof. Richard Penty)</td>
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<td>Education Outreach (BUPT Elementary School)</td>
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<td>Attended oversea conferences</td>
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<td>Team building (Skiing)</td>
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<tr>
<td>Team building (Badminton Competition)</td>
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<td>Chapter officer regular meeting</td>
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<td>Propagation and promotional materials</td>
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Beijing University of Posts and Telecommunications
SPIE Student Chapter

Treasurer (Signature):

Jilong Li

Nov. 30th, 2017